

Nutrition for Dancers

Research Thesis

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Before you read this book, I think it's important to remember one thing... I am not a registered dietician. I have not been put through the many hours of learning how to prescribe diets and make individualized meal plans for others. I am someone who is passionate about nutrition, especially in the nutrition of dancers like yourself. I received two degrees, a Bachelors of Science in Nutrition and a Bachelors of Fine Arts in Dance, from The Ohio State University. Therefore while I have gained knowledge about this subject matter, I am not giving strict advice of what to follow. Rather, I am suggesting how to fuel your body based on research done from both textbooks and books written about nutrition for dancers. I have done my best to put it into ways that are easily understood, while also being relatable! But again, to reiterate, I am not a registered dietician.

There are many reasons why I became passionate about dance nutrition, and more specifically writing about it for college-age dancers to use as a tool as they work out this new world of fending for oneself in terms of finding food to eat (especially when on a meal plan). The first reason is that I believe that nutrition is so rarely touched on in dance, especially at the college level. Many of us come in with some ideas about nutrition, but most of the time they have very little reasoning behind it. We are told we should eat this way, so we eat this way... that sort of thing. I grew up with this same information, and it wasn't until taking nutrition classes that I learned

the value of eating the proper way. I feel that this information is so important as both movers and humans, and I believe that it motivates better eating habits. The second reason that I am passionate about this topic is because typically nutrition in a dance setting is such a negative topic. Many of us have had negative experiences with teachers telling us we need to lose weight or cut calories just to be a certain size. This type of eating not only damages the body, but the mentality behind it can damage your self-image. Dancers have some of the highest rates of individuals with eating disorders. My idea is that if we want to change that we have to start by changing how we talk about nutrition. Many others in sports talk about eating in terms of eating to fuel the body, or to become the most efficient athlete. Why can't dancers talk like this also? Why does it always have to be about eating to be a certain size? These are the questions that I found myself constantly asking when I sat through a sports nutrition class, and therefore it motivated me to talk to dancers about nutrition in this more positive way. The last reason that I was motivated to write this book was that I wanted to provide a book for dancers by a dancer, with some of my own issues and the way that I have problem solved those issues.

In this book you'll find information about various topics in nutrition, various recipes from dancers, and some handy tips about eating around Ohio State. Basically what I hope is that from this

book you are able to start seeing eating in a positive and healthy light, and start to build your own food rituals that can support your art and your body so that you may have a long life of dancing.

“When one wholeheartedly seeks to reach the extraordinary physical heights of a dancer, and can think of nothing but pursuing a career and a life on stage, than talent and virtuosity is attained when, and only when the body is **respected**”
-Zerlina Mastin, *Nutrition for the Dancer*

I found this quote while I was researching for this book, and I don't think that the importance of nutrition to a dancer can be explained better than this. Respecting our body is something that we hear in many of our daily practices, rather it be through a dance class, a yoga class, or in rehearsal. We are constantly told to listen to our bodies when thinking about injury, but listening to our bodies when thinking about how to fuel it is just as important. Without properly fueling our bodies, we are making ourselves more susceptible to fatigue and injury, and we are slowing down the recovery time after a dance class. Our body needs the nutrients—both macro and micro—from our diets to fuel our bodies to make it through not only a 90-minute technique class, but also a full day of dancing. When we skimp on both the quality and quantity of our meals, we are lessening the amount that our body can do for the day.

Calories

One of the first things dancers have to consider in terms of their nutrition is their calorie intake. Keeping our calories up is just

as important as getting enough nutrients in their diet, usually these go hand in hand though. Calories are important for maintaining our body temperature, helping our immune system function, feeding our brain, taking oxygen into our lungs, having proper heart function, and being able to dance during the day. Calories are our body's form on energy, like the gas in our car. We expend this energy while we dance, therefore we need to replenish it to keep up our energy and our body mass. In order to maintain body mass, our energy output needs to equal our energy input. This can be hard to do on a day-to-day basis without properly tracking what we are eating and how much we are burning while we dance. Fortunately, there are apps now that make tracking the food that we eat pretty easy, such as **My Fitness Pal**. This app allows you to scan in food that you eat or simply enter it if it doesn't have a barcode. It also saves your meals so if you eat similar things every day then you can easily insert it. As for tracking how many calories you burn in a day, there are some options—but their accuracy may vary. If you want to be more exact, you can purchase a fitness band such as the **Jawbone Up** or **Fitbit**, they can be expensive—but definitely very useful! Another way is to just to find a website that allows you to insert your weight and how long you danced to calculate the amount of calories. This can be frustrating because during some classes you don't feel like you are burning as many calories, but some you feel that you burnt way more than the calculator says. It can also be difficult because of the

'stop and go' structure of many dance classes. **Livestrong.com** calculated that a 130-lb dancer will burn around 525 calories in a 90-min ballet class, and a 150-lb dancer will burn around 600 calories. The numbers for these are similar for modern classes. Rehearsals will depend on how much you are dancing in the rehearsal. Monitoring how many calories you are burning in dance class or in any type of cross training you are doing will allow you to get an idea of how many calories you need consume.

While keeping track of how many calories we burn in a day is important, we also need understand how many calories our body needs just to function. This is the bare minimum of calories our body needs to do body functions such as digestion and temperature regulation. This is referred to as our **basal metabolic rate** or **BMR**—it can also be referred as your **Resting Metabolic Rate**. The **RMR** accounts for *60-80%* of our daily energy expenditure. Another calculation of energy in our body is the **Thermal Effect of Food**, which is the energy required for the digestion, absorption, transport, and metabolism of food. This accounts for around *6-10%* of our daily energy expenditure.

These numbers are different for everyone, and there are many ways to calculate them. Some of them are not as accessible as others, but the ones that don't require equipment are easy to

calculate to figure out your caloric needs. The first of these equations is the **Cunningham (1980) Equation**. Which is:

$$500 + 22 \times (\text{lean body mass})$$

This lean body mass value is something that you get from getting your body composition tested. As Ohio State students, free body composition testing is available! It is located at the PAES Building (the one attached to the RPAC), in the basement. It is completely student run, and a great opportunity to see where your body is so you are able to make certain goals! (Seriously take advantage of this one...these tests are usually pretty expensive to get done!). However, if you don't have the opportunity to get your body composition tested, the **Harris-Benedict Equation** is the next best option for calculating your BMR. This equation is:

$$\text{For males this is: } 66.47 + [13.75 \times (\text{weight in kg})] + [5 \times (\text{height in cm})] - [6.76 \times (\text{age in years})]$$

$$\text{For females this is: } 655.1 + [9.56 \times (\text{weight in kg})] + [1.85 \times (\text{height in cm})] - [4.68 \times (\text{age in years})]$$

$$1 \text{ lb} = 0.45 \text{ kg}$$

$$1 \text{ inch} = 2.54 \text{ cm}$$

Example
An **18** year old female who is **5 feet 4 inches** and **130 lbs.**

| | |
|---|--|
| $130\text{lbs} \times 0.45 = 58.5 \text{ kg}$ | $64 \text{ inches} \times 2.54 = 162.6 \text{ cm}$ |
|---|--|

$$655.1 + (9.56 \times 58.5 \text{ kg}) + (1.85 \times 162.6 \text{ cm}) - (4.68 \times 18 \text{ years}) = 1,412.43 \text{ calories}$$

Like mentioned above, these values are the bare minimum that your body needs to function in a day. You would add this to the calories that you have burned in dance to maintain your current body weight. If you aren't calculating the amount of calories you are burning while you dance, you would incorporate a physical activity factor into this measurement. This physical activity factor will range from **1.7-1.9**. For example:

$$1,412.23 \text{ calories} \times 1.7$$

$$2,401.13 \text{ calories}$$

Carbohydrates. As a dancer growing up, this was the most touched on word in terms of nutrition—don't eat them, eat the right type of them, but I can't give up carbohydrates... I love cookies. Any of those sound familiar? There are so many diets out there that are based around cutting down carbs, and I feel it is a common misconception that cutting out carbs automatically means that you will lose weight. However, cutting carbohydrates as a dancer is extremely dangerous because they play such a large role in your body's function. Carbohydrates work to burn fat, prevent the body from using the protein that you store in your muscle, provide B Vitamins that help boost your metabolism, and prevent fatigue and injury.

Carbohydrates are also one of the main sources of fuel in your body; it is carbohydrates that run through your major metabolism cycles (But I won't go too much into it). Carbohydrates are made of simple sugar rings such as fructose or glucose. Glucose is broken down through a series of reactions known as glycolysis that generates energy to be used in your body's daily function and in exercise. Extra glucose that is not used is stored as glycogen. This glycogen is then released into the blood stream to be used when your glucose is low...aka when you are running long distances or dancing for long periods of time. These glycogen stores only contain the amount of energy that could keep you going for at most 24 hours if you were to eat nothing. When these stores become depleted, we

become tired and sluggish... Two things that aren't too great for dancing.

How much carbohydrates do we need?

The amount of carbohydrates we need in a day is completely dependent on how many hours you are dancing or exercising. There are also different recommendations that can have differing values of daily carbohydrate intake. What follows is a summary of different ways to calculate your total carbohydrates. Once we establish that, we'll look at what these different ways to plan your carbohydrate intake.

The amount of carbohydrates recommended for the general public's diet is 55-65% of your daily energy intake. Carbohydrates yield 4 calories per gram of carbohydrates. So for every gram of carbohydrate you take in, multiply it by 4 to use in your percent of daily energy expenditure calculation. Sally Fitt's Diet for dancers also recommends this 55-65% of your energy intake. Another recommendation for the amount of carbohydrates to incorporate in your diet is to have 6-10 grams of carbohydrates for every kg of body weight. This is what is recommended for athletes during their training months. This calculation, however, is a large amount of carbohydrates, much more than the 55%. If you are doing a great amount of extra cardio or weight lifting on the side, then you will probably want to reach around this 6-10 g/kg for your daily

carbohydrate amount. However, many dance nutritionists will recommend the 55-65% because it is enough to supplement our daily exercise, and usually helps maintain body weight and composition. However, if you start to do this 55% and are feeling like you are extra fatigued, try reaching towards the 65% range for your carbohydrate intake. The bottom line is that everyone's body is a little different, and everyone is going to need a slightly different amount of carbohydrates.

Here are some examples of how to calculate your daily carbohydrates. I encourage you to calculate this for yourself so you are sure that you are getting the right amount for your body!

The same 18 year old female who needed around 2400 calories a day:
 $2400 \times 0.55 = 1320$ calories from carbohydrates
Since there are 4 calories per gram of carbohydrate:
 $1320 \div 4 = \mathbf{330 \text{ grams of carbohydrates.}}$

*The 2400 calories is based on a moderate activity level—this will change based on activity level.

If you want to use the grams per kg method:
The female weighed 58.5 kg.
 $58.5 \text{ kg} \times 6 \text{ g/kg} = \mathbf{351 \text{ grams of carbohydrates.}}$

****Notice how these are different****

Planning your day

Once you figure out the amount of carbohydrates you need in a day, the next thing to do is figure out how many grams of carbs are in the foods you plan to eat. I'll discuss when is the best time to eat during a dance day in a later chapter, so we won't dive into the timing specifics just yet. But what I recommend doing is planning what you want your diet to be for the day. Write down what you are going to have for breakfast, lunch, dinner, and your snacks. After you write this down, go through and see how many carbohydrates are in each of your food choices. This can be found through looking at nutrition labels or searching the Internet. You'd be surprised at how many foods are full of carbohydrates, and how many have very little. Also consider how many grams of carbohydrates are being devoted to just sugar. For example, a lot of flavored yogurt has a large amount of carbohydrates simply because it contains a lot of sugar. While I'm not suggesting that you cut out sugar from your diet, just consider that sugar may make you energized for a short amount of time and then leave you feeling pretty tired after it wears off. When planning your meal around your dance day, try looking for foods that don't just get their carbohydrates from sugar, therefore hopefully avoiding the sugar crash that we often experience when we binge eat candy.

Once you add up your carbohydrates for your day, you may find that you need to alter it to better meet your recommended

amount. This may mean adding another carbohydrate filled snack, or changing out a high carbohydrate snack for a lower one. This alteration is why I find it very helpful to plan my day before I actually eat. As a personal testimony, it is rather unfortunate to have eaten all your carbohydrates early in the day and then be stuck with a potentially unsatisfying dinner. I try to stick to my carbohydrate amount as much as I can because I find that when I go over, I am more lethargic (and it usually means I'm skimping on something else like fat or protein). Bottom line, try to plan your day so you can have a full day of balanced meals that keep you energized for your training day and prepared for your next day.

Types of Carbohydrates

There is a big question and constant debate when it comes to what type of carbohydrates we should be eating. In the end it comes down to getting carbohydrates that have the best nutrient quality—ones that are not just straight sugar. For example, white bread is only full of carbohydrates, but whole grain bread is a good source of fiber on top of being a good source of carbohydrates. The fruits that contain carbohydrates are usually also good sources of vitamins, minerals, and fiber. Choosing these 'complex' carbohydrates rather than the 'simple' carbohydrates will help in getting not only your carbohydrates, but also the proper amounts of other micronutrients.

Choosing Carbs on Campus

Being on a meal plan and eating well can be difficult. Is it impossible...no—but you are often stuck eating processed, simple carbohydrates such as hamburger buns or cake. While these things taste good, they might not give you the right amount of energy to make it through your day. It is also hard to fall into the cycle of eating bagels out of convenience when you are at the library. For some reason when I came to college, I decided that the most delicious meal in the world was a bagel and cream cheese. While delicious, I started to run low on energy during the day because a bagel only contains sugar. Instead of going for the hamburger bun, try going to places that serve quinoa or good fruit. I know the RPAC has some good options for quinoa or rice and vegetables. Also consider picking up another apple at the dining hall for a snack later in the day. When you aren't grocery shopping for these snacks, preparing what snacks that you get from campus dining can be very important. When I was a freshman, I would pick up an apple and a peanut butter packet to have after dance class. I personally think it's worth it to walk a little bit more to get good food than settling for food with a low nutrient quality. This will not only give you some extra exercise, but allow you to fuel your body for all the dancing you are doing!

Something else to consider if you are a freshman is that food becomes at times a purely social thing. You're friends are making an

Insomnia Cookie run at 3 am, or ordering Catfish Biffs for the fifth night in a row—these are all things that you don't want to miss out on. Also, with drinking comes the whole problem of drunk eating. When you are in this altered state of mind, the first thing you are going to reach for is probably not going to be a salad. It will probably be some processed, carb heavy, delicious food that you might regret in the morning. It's easy to fall into this pattern of eating because it honestly is one of the fun parts of college. Maybe just consider what you have to do the next day with regards to dancing instead of having the whole box of Insomnia Cookies.

Summary Points

- Carbohydrates are the major source of fuel for our body.
- We need between 55-65 % of our daily energy expenditure to be carbohydrates (We can also use the formula of 6 g of carbohydrates for every 1 kg of body weight).
- Plan your carbohydrate intake before your day begins to ensure that you balance your intake throughout the day, instead of binge eating them at one meal.
- Choose complex carbohydrates (carbohydrates that are more nutrient dense).

Gluten-Free Dancing: My Personal Testimony

Gluten free eating has popped up significantly in recent years, both as a personal choice and for medical reasons. I became gluten free my freshman year of college because of medical reasons—I discovered I had Celiac's Disease. In Celiac's Disease, ingesting gluten damages the lining of your intestine, and causes symptoms such as stomach pain and discomfort, fatigue, 'foggy brain', and other individual reactions. Each person has a different degree of Celiac's Disease and a different tolerance to gluten—some even have an extreme intolerance to the point that they cannot eat anything that has been near gluten. Luckily, mine wasn't that severe. Other friends of mine have gluten sensitivity, which causes gluten to have negative effects on the body. This is also a range, and very individual. Before I continue, I would also like to clarify that there is a difference between choosing to be gluten-free and being gluten intolerant. Being gluten free, while potentially healthier, does not mean that you have to stick to this gluten free lifestyle if you have trouble keeping high energy while on it. If its not working for you, don't just do it for the high popularity of the diet, or because you think you will lose a ton of weight on it. As a dancer, you should be making choices that facilitate your dancing. Therefore embrace the ability to eat gluten and eat the best way that keeps your energy up. As for those who are gluten sensitive, unfortunately we have to make do with how our body is.

There are many challenges that come with eating gluten free, such as struggling to find enough carbohydrates—or rather good forms of carbohydrates. When I first became gluten free, I felt that I was only able to eat rice chex, which is not only very unsatisfying, but also it doesn't have a large nutrient value. There are many types of breads that taste good and contain some extra nutrients. My favorite is **Udi's Gluten Free Bread** with Chia seeds. Udi's also has whole grain and white bread, and a variety of other gluten free foods. I also found that just eating rice with my meals wasn't enough. Therefore, I incorporate **quinoa** into my diet everyday. Whether it is just plain quinoa with some coconut oil or quinoa pasta, I try to eat it for either lunch or dinner because it provides carbohydrates and protein. As for snacks, I had to be careful about which protein bars or granola bars I ate, some of them have hidden gluten in them. I found that **Larabars** are a nice snack and they have very few ingredients (I also think they are delicious). I put carbohydrates in meals throughout the day to keep my energy up. Being gluten free isn't hard, it just requires creativity to fill your diet the way you used to before you were gluten free.

A Gluten Free Snack for Theresa Niermeyer

****Theresa is a recent BFA graduate from OSU!**

Ingredients:

2 large, very ripe bananas
1 teaspoon vanilla
2 cups rolled oats
¼ cup pitted and chopped dried dates
¼ cup chopped nuts
Grated Nutmeg or Cinnamon

Cooking Instructions:

Heat the oven to 350°F and lightly grease a 9x9-inch square baking dish with olive oil or butter.

Peel the bananas and mash their flesh in a medium mixing bowl. Mash very thoroughly until no large chunks remain; the bananas should be essentially liquid. (You will have between 1 cup and 1 1/4 cup.) Stir in the vanilla, if using. Add the oats and stir them in. Stir in the salt, dates, and nuts.

Pat the thick mixture evenly into the baking pan. If desired, sprinkle the top lightly with nutmeg or cinnamon. Bake for 30 minutes or until the edges just begin to crisp up.

Place the baking pan on a rack to cool. When the pan is mostly cool, cut into bars.

*Found from <http://www.thekitchn.com/healthy-snack-recipe-5-ingredients-156571>

Just like carbohydrates, the group of fats has a negative connotation associated with it. Many times when we think about eating fat, we think of eating greasy things. While these do contain fats that aren't good for you, there are a whole bunch of fats that are good for you, and essential for a dancer to have in their diet. Fats have a variety of functions such as encouraging muscle tone, providing energy for our muscles, supplying structure for our brain, helping our body absorb vitamins and minerals, helping make vital hormones, maintaining immune function, and keeping healthy hair and skin. As you can see, fats play a huge part in our day of dancing, and they keep us looking great!

Saturated vs. Unsaturated

As I just mentioned, there are fats that are good for you and fats that aren't. The fats that aren't good for you are saturated fats. These fats are typically high in cholesterol, which can later on lead to an elevated risk for chronic diseases such as cardiovascular disease. The foods that contain these saturated fats are butters, cheeses, whole or 2% milk, or fatty beef. They are also found in processed pastries. These fats are recommended to be limited in the diet because of their high cholesterol. There are some people that feel that they can get away with eating these high saturated fat foods because of their high metabolism. However, something to consider is that even if your fat is not being stored in places where people can

see, it is stored in your arteries and your organs. It's important to consider that consuming a diet high in saturated fats puts you at high risk for high blood pressure or the chronic diseases, even if you don't feel like you are gaining visible fat. Coconut oil is also high in saturated fat, but it is not high in cholesterol. For this reason, coconut oils are recommended—they have some other benefits that will be discussed later!

The good type of fats are unsaturated fats, both mono- and poly-unsaturated. The monounsaturated fats come from foods such as olive oil, nuts, and seeds. These fats can be added into your diet by adding bits of olive oil into your cooking or keeping nuts with you to snack on during the day. Polyunsaturated fats are found in most vegetable oils and some fatty fish, such as salmon. I personally have a harder time incorporating these into my daily diet, because they aren't as accessible to just snack on. Polyunsaturated fats are also found in sunflower seeds, which I put on my salad or into a trail mix to snack on before or after class.

The most important type of polyunsaturated fats are omega-3's. These have become more prevalent in daily conversations regarding nutrition, and as dancers they are essential to incorporate into our diets. Omega-3s have an anti-inflammatory function that helps reduce strains on joints and promote healing of injuries and stress that comes with over-training. Omega-3s are also important in transporting oxygen and nutrients to cells, and keeping stamina

and energy levels high. These omega-3 fats can be found in fatty fish, flaxseeds, flaxseed oil, soybeans, and walnuts. There are also many foods that are fortified with omega-3s and supplements that you can take if you are having trouble putting them in your diet. My recommendation is to buy flaxseed from the store and put it into foods such as cereal, oatmeal, or smoothies. It doesn't really have a taste, so it's an easy way to enhance your foods without ruining them!

How much fat should go into my diet?

Some people are very hesitant to incorporate fat into their diet, or eat foods that are only 'low fat' or 'fat free'. As mentioned before the good types of fats are necessary in our diet even if we weren't dancers. The recommendation for fat in our diet is 25% of our daily energy expenditure. Fats have a conversion of 9 calories for every gram of fat. Here is an example of how to calculate the amount of fat you should have in your diet:

Again, using the female who needed around 2400 calories a day:

$2400 \text{ calories} \times 0.25 = 600 \text{ calories}$
Since there are 9 calories per gram of fat:
 $600 \text{ calories} \div 9 = \mathbf{67 \text{ grams of fat.}}$

*The 2400 calories is based on a moderate activity level—this will change based on activity level.

Planning your Day

Just like for carbohydrates, plan your fat intake before you eat for the day. Since many of these fats are in the forms of oil, it can be difficult if you are eating on campus, eating out, or eating processed food because you don't have always know what is being used to cook the food in or how much. Making you own food makes the much simpler because you get to choose how much and which oils to put in. Since carrying around oils in your dance bag can get messy, I find that incorporating the nuts and seeds that have your needed fats and incorporating those into snacks helpful. Remember that these help provide energy for your dancing, so snacking on some nuts before dance could help keep you energized during a long dance or rehearsal! Like carbohydrates, be careful about how you space out your fats... you'd be surprised at how quickly they add up. Even though it is more time consuming, it will be worth you time to plan when you are incorporating fats into your diet.

Fats on Campus

Similar to the carbohydrates, eating fats that are good for you while on the meal plan can be difficult because you aren't cooking. Much of the bad fat in our diet comes from grease that certain meats are cooked in. At traditional dining halls, you can usually ask what your meat is cooked in, and try to prevent having too much grease. You can also tell by how your meat feels (does it feel like it's super

greasy... if it does, then it probably is). Also, when you can control what types of fats you are getting...control it. You can do this by buying packages of almonds as a side, or making an extra purchase of flaxseed to incorporate into your meals.

Summary Points

- Fats provide energy for our muscles and help transport vitamins and minerals throughout our body.
- Avoid saturated fats, instead choose unsaturated fats—especially omega-3's
- Plan for 25% of your daily calories to be from good fats.
- Remember that what you cook your food in contributes to your fat intake.
- When eating on campus be careful about how greasy your meat is, and pack snacks such as nuts and flaxseed for a good source of fat.

Coconut Oil: The good-for you saturated fat

Lately there has been a large amount of hype surrounding coconut oil. It has more uses than just in your food, such as moisturizers for your hair and skin or make up remover. As a food, it can seem questionable because it is high in saturated fat. However, since it is a vegetable oil, it contains no cholesterol and no trans fat. This makes it different than the saturated fat in butter or cheese. There have been recent studies indicating that coconut oil can actually decrease or neutralize bad cholesterol levels, and raise good cholesterol levels because it contains Lauric Acid. Coconut Oil also has some antioxidant properties that help reduce damage in your bodily organs. Coconut Oil has also been shown to increase thyroid function and improve your metabolism.

Even though there are health benefits from coconut oil, it is still recommended to use it in moderation because of the saturated fat content and the limited amount of research at the current time. It is recommended to incorporate this into your cooking or into smoothies. I use coconut oil instead of other oils when I cook because I enjoy the way it makes my food taste. However, some people are sensitive to the coconut taste. If you put a small amount in your smoothies it doesn't impact the taste too much. Like anything else, try out what works best for you!

Proteins were the macronutrient that I understood the least before I took a nutrition class. I feel that many dancers have the misconception that if they eat too much protein they will bulk up in a way that is unappealing to a dancer. This however isn't the case... extra protein that you eat generally does not get converted to extra muscle. Skimping on protein will only hurt a dancer because of the many important roles that they play in our body. Protein helps to build lean muscle that helps in balancing and core stability, prevents water retention, helps in injury prevention, and encourages healthy hair and skin.

The protein in food is made up of strands of individual amino acids. While some of these amino acids are made by our body—and are therefore called non-essential—we must get many of them from our food. There are 20 essential amino acids that we have to supplement into our diet as a dancer. Certain proteins only have a few of these essential amino acids and are considered to have low biological value. However, some proteins have high biological value because they contain all 20 of these amino acids. These proteins are fish, poultry, red meat, and eggs. While we can get proteins from other sources, incorporating these into your diet will allow your body to fully function since it will have all the amino acids that it needs!

How much protein should you have?

Like carbohydrates, there are different ways to calculate how much protein you should plan for during the day. If we are looking at our daily energy intake, dancers should have 15-20% of their daily intake be protein. This will shift as you exercise, and will allow you to increase your protein intake if you are working out more during the day. Another way of calculating your daily protein is to have 1.2-1.6 grams of protein per kilogram of your weight. Here are examples of how to calculate this based on your weight and your total caloric intake:

We'll use the same female who needs 2400 calories as our example:

$$2400 \text{ calories} \times 0.15 = 360 \text{ calories}$$

Since there are 4 calories per gram of protein:

$$360 \div 4 = \mathbf{90 \text{ calories of protein}}$$

*The 2400 calories is based on a moderate activity level—this will change based on activity level.

If you want to use the grams per kg method:

The female weighed 58.5 kg.

Since you need 1.2 grams of protein per kg of body weight:

$$58.5 \text{ kg} \times 1.6 \text{ grams} = \mathbf{93.6 \text{ grams of protein}}$$

Note that these values are only slightly different

Planning your Protein Intake

Like what we have discussed with every other macronutrient, planning out your protein intake before your day is essential to ensuring that you get the right amount of protein to keep your muscles strong and stable. Something to consider is that complete proteins tend to fill you up easily (think Chicken and red meat); therefore these could be paired with smaller side dishes. For my own preference, I have to have protein throughout the day, starting at breakfast. I find that if I incorporate protein throughout the day I will have more satisfying meals and I won't be as full from certain meals. This is especially important for during your day because being weighed down by the hamburger you had a lunch doesn't always lead to a great rehearsal or class. Another way to get your protein is to incorporate protein shakes in your diet as snacks. This has really made a difference in my energy levels throughout the day, and has helped me gain strength through my cross training. As long as you are finding a protein that sits well with you, it can be a great snack to add in after rehearsal with some milk or water.

Types of Protein

The types of protein that we choose depend entirely on our preferences, for example vegetarian versus meat eater. If you are vegetarian, read ahead for the special topics section on being a vegetarian and still getting your protein. If you are a meat eater,

focus on proteins that are lean such as beef, pork, lamb, turkey, or chicken. Also incorporating eggs in the morning are a good way to get your protein early on. Finally, supplementing your snacks with nuts or greek yogurts are good ways to fill your diet with protein!

Protein on Campus

I think that the easiest way to get good protein on campus is to eat chicken, some non-greasy burgers, and lunchmeat. By focusing on getting these meats for your meals, you should have no problem reaching your protein needs. Also, most of the campus dining places now have greek yogurt. Something to be careful of is the amount of sugar that is in some of the flavored or 'fruit on the bottom' yogurt packs. Also, similar to fats, eat packs of almonds that can be found on campus. I think protein is the easiest macronutrient to get on campus, so long as you are intentionally planning it into every meal.

Summary

- Protein helps in building lean muscle that helps in stability, and also helps to prevent injury
- Focus on proteins that give you all 20 amino acids such as fish, poultry, red meat, and eggs.
- Your protein intake should be 10-20 % of your daily calorie intake, or 1.2-1.6 grams per kg of body weight.
- Pair protein in with other side dishes.
- Don't be afraid of the protein shake!
- Eat lean meats over fatty meats
- Intentionally plan protein if you are eating on campus!

Being Vegetarian and still getting your protein

Although I am not a vegetarian, I have spoken with some of my classmates who are vegetarian/vegan about how they get their protein. Some, who are pescatarians, get their protein from fish. However, as a college student they have found that fish can get to be too expensive for their budget. Therefore they get their protein from nuts, dairy, and protein shakes. Also another way to get their protein in is to have nut butters, such as peanut butter or almond butter. Kerry Dibble, who is a graduate of OSU, suggests getting the nut butter that is only from the nuts and has no processed sugar in it. There is also the tofu option if you like the taste and texture of it. Incorporating high protein snacks into your diet is crucial as a vegetarian since you don't have as wide of an option to get the complete proteins.

No-Bake Energy Bites From Kerry Dibble!

****Kerry is a recent BFA graduate from OSU!**

Ingredients

1 cup dry oatmeal
2/3 cups toasted coconut flakes
1/2 cup peanut butter
1/2 cup ground flaxseed
1/2 cup chocolate chips
1/3 cup honey or maple syrup
1 tablespoon chia seeds
1 tsp vanilla extract

Directions

Stir all ingredients together in a medium bowl until thoroughly mixed. Cover and let chill in the refrigerator for half an hour.

Once chilled, roll into balls of whatever size you would like. (about 1 inch in diameter) Store in an airtight container and keep refrigerated for up to 1 week.

Makes about 20-25 balls.

Found from: <http://www.gimmesomeoven.com/no-bake-energy-bites/>

Vitamins and minerals are different than what we have discussed in the previous chapters because they are not a large part of our diet like the macronutrients. Rather, these micronutrients are needed in small doses because many of them are stored in your body overtime. The vitamins are necessary because they become a part of enzymes in our body to help them function. Without these vitamins, the enzymes cannot function to build new protein or breakdown fat. There are two types of vitamins: fat-soluble and water-soluble. The fat-soluble vitamins don't need to be included in the diet everyday because they are stored in fat cells in the body. However the water-soluble vitamins do need to be ingested daily because the amounts of these vitamins that are not used are excreted in the urine. Minerals cannot be made in the body, and therefore we have to supplement them into our diet. Minerals function in the body by being key components of bone, helping muscles contract, and keeping fluid balanced. There is a great deal of research going around about what the best way to get these vitamins and minerals are—whole food consumption versus supplementation. While supplementation would ensure that you are taking in the proper amount of each vitamin, supplements are not always absorbed into the blood stream as easily. There have been recent studies that have shown the components of the whole foods aid in the absorption of the vitamins and minerals. Therefore it is recommended that you try to get your daily amounts through nutrient dense foods rather than taking large

amounts of supplements. Taking a multivitamin in the morning is also an option, just also be sure that you focus on getting your vitamins and minerals throughout the day also! Let's go through each important vitamin and mineral separately and talk about why they are important and how to get them.

Vitamins: Vitamin C

Vitamin C is the vitamin that many people do not need to worry about because the amount we take have in our diets are typically enough for the body. Vitamin C plays specific roles in forming and repairing connective tissue in the body. Vitamin C helps form collagen, which makes tendons and ligaments. Vitamin C also plays a large role healing wounds and proper immune function. Vitamin C also aids in iron absorption, therefore inhibiting the development of iron-deficiency anemia. On a more microscopic level, Vitamin C acts as an antioxidant. These antioxidants protect the body from oxidative stress that can damage tissues in the body.

The recommended daily intake (RDI) for Vitamin C is 75 mg/day for adult females, and 90 mg/day adult males. It is recommended that no more than 250 mg/day be ingested because high doses of Vitamin C can cause the body to reduce the amount it conserves. Vitamin C is a water-soluble vitamin, and therefore is excreted in the urine in excess. This is something to remember when

you take Vitamin C if you are sick—taking too much will not make you better, it will just be wasted and excreted.

The reason that Vitamin C deficiency is so rare is because most fruits and vegetables contain Vitamin C. The foods that are the best source of Vitamin C are citrus fruits, strawberries, broccoli, and sweet potatoes. But it is also found in high doses in red peppers, blueberries, cranberries, papaya, watermelon, and brussel sprouts.

Vitamins: B Vitamins

These vitamins, while individual vitamins having their own function, are often grouped together as the vitamin B complex because they all work in the process of metabolism. There are eight key B Vitamins that a dancer needs to have: Thiamin (B1), Riboflavin (B2), Niacin (B3), Pantothenic Acid (B5), Pyridoxine (B6), Biotin (B7), Folic Acid (B9), and Cyanocobalamin (B12). These vitamins also play a large role in energy production, red blood cell formation, and keeping healthy skin and hair.

Vitamin B1: Thiamin

Thiamin plays an important role in carbohydrate breakdown. It is found in red meat, milk and dairy products, and fortified cereals. The RDI for Thiamin is 1 mg/day for men and 0.8 mg/day for women.

Vitamin B2: Riboflavin

Riboflavin plays a large role in converting carbohydrates into energy. They are found in green leafy vegetables and dairy products. The RDI is 1.3 mg/day for men and 1.1 mg/day for women.

Vitamin B3: Niacin

Niacin, like riboflavin, plays an important role in converting carbohydrates into energy. It also is required for a healthy nervous and digestive system. Niacin is found in meat, fish, and fortified cereals and milk. The RDI for men is 17 mg/day and 13 mg/day for women.

Vitamin B5: Pantothenic Acid

Pantothenic Acids work in the metabolism of all the macronutrients. It also helps to produce hormones that relieve stress, as dancers this is crucial! It can be found in salmon, eggs, nuts, and vegetables. There is not an RDI for Vitamin B5.

Vitamin B6: Pyridoxine

Pyridoxine works like pantothenic acid in the metabolism of the macronutrients. It also has a large role in red blood cell formation. B6 is found in chicken, turkey, eggs, nuts, and bananas. The RDI for B6 is 1.4 mg/day for men and 1.2 mg/day for women.

Vitamin B7: Biotin

Biotin is used to breakdown the macronutrients into energy that can be used throughout the body. It also helps form fatty acids.

Biotin is found in eggs, whole grain cereals, nuts, and seeds. Like B5, there is not an RDI for Biotin.

Vitamin B9: Folic Acid

Folic acid is important in red blood cell formation. It also is very important during pregnancy. It is found in brussel sprouts, green vegetables, and lamb. The RDI is 0.2 mg/day for adults.

Vitamin B12: Cyanocobalamin

B12 helps in red blood cell formation, and protection of nerves. B12 is found in food in meat, fish, and eggs. Therefore, this is a vitamin that vegetarians should find a food that is fortified with B12 such as milk or cereals. The amount that adults need in their diet is very small.

As you can see the amount of each of these vitamins needed during the day is very small, and the sources that provide these vitamins are very broad (with the exception of B12). Therefore, planning them into your diet isn't as hard as long as you are eating balanced meals full of whole foods!

Vitamins: Vitamin D

Vitamin D is a unique vitamin because we can get it from both food and from sunlight. Vitamin D functions by helping maintain bones and teeth, and it also assists in the absorption of Calcium. Vitamin D can be found in oily fish such as trout, eggs, and some fortified breakfast cereals and milks. The RDI for Vitamin D is

15 micrograms/day for both males and females. Spending around 15 minutes a day in the sun will also help you get enough Vitamin D for proper functioning.

Minerals: Iron

Iron is a very important mineral for dancers because it is a key component of hemoglobin in red blood cells. This hemoglobin transports oxygen to our muscles while we are dancing. Lack of Iron in our diets can lead to anemia that can cause a dancer to feel like they have very little energy, are out of breath, and even feel very irritable. These aren't things that a dancer wants to feel during a long day of class and rehearsal. The best form of iron is from animal products because they naturally have iron in their body because of their blood. If you are a vegetarian, it is important to plan your day to include iron so that you don't develop anemia. Food sources high in iron are beans (navy, lima, or black), spinach and collard greens, raisins, legumes and nuts, and iron-enriched grains. Egg yolk is also very high in iron. The recommended daily allowance for iron is 8 mg/day for men and 18 mg/day for women. Women need more iron than men because of menstruation.

Minerals: Calcium

Calcium is found in large amounts in the human body, and is so important to a dancer because of its many functions. Calcium

assists muscles while they contract and helps with bone density. This bone density is important as a dancer because of the potential breaks, stress fractures, and other injuries that can come with thin bones. If you don't consume enough calcium in your diet, your body will begin to extract it from storage (your bones) to be used in your body. It is that essential in its daily function that it will deplete other areas in your body just so it can be present for use in the muscles. Calcium also helps in nerve function.

Calcium is found in dairy products such as milk and cheese. Calcium absorption is increased by Vitamin C and Vitamin D, so eating these foods together will promote uptake into your blood stream. If you are lactose intolerant, or just don't like dairy, you can get your calcium from green leafy vegetables, tofu, and other soy products. Calcium is also present in some nuts (so great for snacks!). Our daily intake of calcium should be around 1000 mg!

Minerals: Zinc

A mineral that is not often discussed is zinc, but as dancers it plays an important role in keeping us healthy by boosting our immune system and helping to heal wounds. Zinc deficiency is common among dancers and vegetarians. When we are deficient in zinc we will have a slower immune system and slower wound healing (all those marley burns!). Females need 7 mg/day of zinc,

while males need 9.5 mg/day of zinc. Zinc is found in meat, shellfish, and fortified cereals. It is also found in beans, nuts, and seeds.

Planning for Vitamins and Minerals

This section has provided many sources of the vitamins that we need to support our dancing. There are many other vitamins and minerals that we get from fruits and vegetables... but these are the ones that are most important for dancers. As I've mentioned throughout much of this chapter, it is better to get these vitamins from whole food sources rather than supplements. If you are eating from home, plan to pack vegetables and fruit to snack on during the day, or some nuts and seeds. As we've seen these are great sources of a plethora of vitamins and minerals. These aren't like the macronutrients where you need to look at each amount and plan your meals around that, instead you just look at the type of foods that you are eating to ensure you are getting a great palette of vitamins and minerals. If you are eating mostly processed foods, chances are your vitamin and mineral intake will be less.

If you are eating on campus, try adding a side salad or a full salad for lunch and dinner. When you make your salads, make them as colorful as you can! Eating on campus was difficult in terms of getting enough fruits and vegetables—I felt that I was only eating processed carbs and snack foods. I started to feel lethargic and heavy when I danced. (When I say heavy I mean that I felt like I had a block in my stomach). I started to add salads and fruits into my

meals, and it really started to improve my energy. It's easy to get swept away by the freedom of eating on campus, but sticking true to foods that are good for your body will not only help you maintain your weight and body composition, it will help to keep you energized so your dancing will improve.

Summary

- Vitamins help various enzymes in our body to function properly
- Minerals are key components of bone, and help various muscular functions in our body.
- Focus on getting vitamins and minerals from whole foods rather than just from supplementation.
- Look at what foods are high in vitamins and minerals as you plan your day-to-day meal plan.

As a dancer, we are always encouraged to incorporate water throughout our day—which planned water breaks in class and rehearsal. I'm sure many of us carry water bottles around...but are we really sure that we are getting the proper amount of water in our day. Tracking our water intake can be just as tedious as tracking our food, and just as important. Getting enough water is essential for many body functions such as carrying nutrients through the bloodstream, ridding the body of toxins, repairing tissues, and promoting metabolism through enzyme reactions.

When we dance, we lose water through sweat. This sweat is our body's way of cooling itself to maintain its body temperature. When we get dehydrate, our body loses the ability to produce sweat. When we can't sweat, our body can overheat and we can become easily fatigued during class. We also put ourselves at higher risk for cramps and muscle soreness when we are dehydrated. The sneaky thing about dehydration is that our body doesn't give us any warning signs that we are dehydrated. When we start to feel very thirsty, it is our body telling us that we are already dehydrated (our body can even use hunger to cue when we are dehydrated).

How much water should we drink?

The general recommendation for water is 8 glasses of water a day for daily living. Dancers need more than this because we sweat throughout class and rehearsal, therefore losing more water than the

average person. However, we cannot just drink this all in one sitting, we have to space it out throughout the day. It is recommended that 2 hours before class you have at least 400-600 ml of fluid, and then have small amounts of fluid every 15-20 minutes of dance class or rehearsal. After class, we need around 1.5 liters of water to replenish ourselves from the water we lost during class. With our short break in between classes, this replenishment can be difficult. If you have trouble dancing with large amounts of water in your stomach, try replenishing your fluids immediately after class so you will have time to let it settle in your body before your next class begins.

Sometimes drinking water throughout the day is difficult because we forget about it. For me, this usually happens when it is cold because I don't feel as thirsty during the day. I have found that having a water bottle that is easy to drink from with you at all times to be very helpful in keeping your fluid intake high. I am partial to a **camelbak** because it is easy for me to continue drinking throughout the day, and easy for me to pick up during class when I need a sip. There are also some apps on your phone that will remind you to drink water daily. While I understand the use for it, I personally had trouble keeping up with it. It was way easier for me to track my food than my water. Therefore, when I was picking up a water bottle, I made sure the one I chose had milliliter markings on it, so I could keep track of how much water I was drinking based on how many

times I had refilled my water bottle (and I only refill my water bottle when it is empty). If you track your water, you can help prevent dehydration. However, if there is a day when you haven't kept good track of your water, you can tell if you are dehydrated by the color of your urine. Darker urine indicates more dehydration, while lighter or clear urine indicates that you taking in enough fluid!

Types of Fluids

The most obvious choice when choosing a fluid during the dancing day is water. Most people will advise choosing water because it doesn't add to your daily calories, and it contains no sugar. However, if you feel that you need some 'energy' component to your fluid, a choice is having a fluid with some form of carbohydrate in it. Some examples of these are Gatorade, diluted fruit juice, or drink mix packets. You are able to control the amount of these you are drinking by changing how much you dilute the fluid with water. This will make the drink less heavy in your stomach while you are dancing. Deciding to have these over water is a personal choice because they are really only needed when you are going at moderate to high intensity dancing for more than an hour.

The fluids that you choose to consume when you aren't in 'dancing mode' also impact your nutrition. For example, sodas are usually high in sugar or chemicals that can make you feel fatigued later on. These high sugar drinks can also cause stomach discomfort

later in the day if you are dancing. The chemicals in the drinks can impact your stomach lining. These are all things we have learned in the recent research behind soda.

Coffee is also a fluid that is constantly consumed among college students. I am a coffee addict myself, but I know when I can drink it to avoid upsetting my stomach. Caffeine can cause increased urination if you don't regularly consume it, which can cause you to become dehydrated quicker. For people who consume coffee regularly, coffee has less of a diuretic effect. Since coffee does contain caffeine, it is a stimulant. This can cause you to have increased energy during your dance class, but it can also cause you to get extreme anxiety during a dance class. My recommendation would be not to consume your first-ever, large coffee before a dance class because you feel like you need a 'pick-me-up'. This will probably result in some adverse effects that will make the class difficult to get through. It is important to remember that decaf coffee still contains little bits of caffeine. Everyone is sensitive to caffeine in different ways... so there is no way for one person to recommend the amount that you should be consuming. Make sure that you stop consuming caffeine early enough that you are able to get a healthy amount of sleep. Yes, college is hard...yes, you are tired... no, you don't need to have 6 shots of espresso to stay up and study for a big test. Trust me, this won't help how you do on the test, nor will it help how you dance the next day.

Summary

- Fluids help carry nutrients through our body, and rid our body of toxins.
- Signs of dehydration in our body include being thirsty, therefore don't just wait until you are thirsty to drink water.
- Drink 400-600 ml of water 2 hours before class.
- Drink small amounts of fluid every 15-20 minutes of class.
- Try to drink 1.5 liters of water after class to replenish the sweat lost during class.
- Focus on the fluids that you consume outside of class such as soda and coffee also.

Alcohol and Dance

You are in college, and for potentially the first time in your life it seems that there is a plethora of alcohol...EVERYWHERE. Whether or not you drank in high school, the amount of alcohol available to you as a college student, even an underage freshman, is enormous. Not only is it available to you, but also you feel like there are no rules...therefore why not party every night. This seems like a great idea, until you have to wake up the next morning and pirouette

as many times as you can. This section isn't saying that as dancers we shouldn't consume alcohol... that would be hypocritical of me. The key as a dancer is to be smart about when you are drinking. Unfortunately as a dancer in college, we can't live the extreme party lifestyle that some others get to live.

The first thing to be careful about is going to the bar right after you've danced or worked out. I had a biochemistry professor who said "no six pack after RPAC". This is because drinking after exercise can cause you to become hypoglycemic and can ruin all the work that you just did by exercising. The next thing to consider is drinking the night before you after to dance (or even a little before you have to dance). Alcohol can make your dancing slow and weak. It can also increase the rate at which you get dehydrated, and decrease your balance and coordination. Basically what all this can lead to is getting injured. We have to respect our dancing body... therefore be in the best mental state to control how we are moving it.

The final thing to consider with alcohol is that alcohol in itself still contains calories. It contains 7 calories per gram of alcohol. Therefore, when you drink straight liquor, you are still consuming calories (even more than when you consume a gram of carbohydrate or protein). For example, a shot of tequila has 97 calories just from alcohol. Most people combine their drinks with mixers, which contain calories, and usually large amounts of sugar.

Therefore the calories start to add up. If you didn't plan for this in your diet, it can really cause you to go over your daily energy intake. Doing this too often can cause weight gain. That being said, it isn't okay to skip on your meals so you can party that night. Not only is that impacting your dancing during the day, but also it is depleting the energy you have for the next day, and feeding your body empty calories of just alcohol. This is pretty much the equivalent of just eating cake all day.

Throughout this book we have discussed planning your meal for your day-to-day class work. This planning comes through trial and error of what you feel makes you the most efficient dancer. I feel that we have briefly discussed what this word efficient means, but let's dive into it a little more. Being an efficient dancer means feeding your body so that it has all the fuel and resources to successfully train and improve. This is like studying for a class. You get the book, you go to class, you take the notes, and you study all for the purpose of doing well on a test and the class as a whole. Taking a class should be just like taking a test—you have to prepare for it. This preparation comes from cross training, warming up, and most importantly nutrition. Fueling your body to be efficient ensures that you are getting the proper amount of each macronutrient in order to prepare it to move and to help it recover. This can be applied not only to class but also to your performance weekend. How you fuel your body impacts your body's ability to perform.

Before a class or performance, there are ways to prepare your body for the work that you are going to do. Some of these are personal preference, but I will briefly outline what is recommended for athletes and include some sample meal plans from fellow dancers. 4 hours before a class or performance, a meal high in carbohydrates is encouraged. This is so the body can start building up glycogen storage to be used when you are dancing. These carbohydrates are usually heavier, so 4 hours gives you enough time

for your body to properly digest them. Foods low in fat, low in protein, and low in fiber are encouraged before a big dance event because they can cause gastrointestinal distress, especially when nerves start to set in. Small snacks are encouraged closer to the event to keep your metabolism and energy up. After a performance, meals with around 50 grams of carbohydrates and 10 grams of protein are encouraged for proper recovery. Some examples of this are a peanut butter sandwich on whole grain bread, a protein bar, or chocolate milk (low fat).

Here are some sample meals for day to day that dancers at OSU have found helpful! I've included mine as well!

My Meal Plan

Breakfast:

Option 1: 3 eggs, spinach, and a banana

Option 2: ½ cup of oatmeal, 1 tablespoon of flaxseed, 1 tablespoon of peanut butter, drizzle of honey.

Always: Coffee

Before Technique Snack (If I have a 8 am class):

Almonds and raisins

Lunch:

Greek Yogurt with Honey

1 Larabar

Grapefruit

Gluten-free Pretzels and Hummus

Snack After Rehearsal:

Combination of vegetables (celery, carrots, cucumber, red and green peppers) and hummus
½ cup cottage cheese.

Dinner (Varies, but here are some options):

Option 1: 8 oz of chicken with grilled veggies and rice.

Option 2: 1 cup of quinoa pasta, 1 large turkey sausage, spinach

Option 3: Quinoa, Potato, and Spinach soup, 1 cup of quinoa pasta.

My 'if I need more calories snack':

To choose this, I look at if I need any more macronutrients. I usually run into this on days when I work out a ton. I choose snacks that will fulfill my macronutrient requirements.

Courtney Bland's Meal Plan

****Courtney is a recent OSU BFA graduate!**

Breakfast:

Steel Oats Mixed with Cinnamon

Coffee

Lunch:

Spinach salad with cucumbers and Italian dressing

Plain greek yogurt and strawberries

Snack:

Orange or grapefruit

Cashews

Grapes

Dinner: Also Variable

Eats a meal with protein (usually chicken)

There was a statistic found in 2013 that said 1 in 5 ballet dancers have an eating disorder. While this statistic is generally smaller in the modern dance community, the prevalence of eating disorders and poor body image is still there. Eating disorders are similar to athletes taking performance enhancing drugs. You'll get some results, but you will have to pay the consequences for the damage done to your body.

Why do dancers have some of the highest statistics of eating disorders? The answer lies in our perfectionist personality, our constant relationship with the mirror, the self-criticism that we constantly give, and the competition that we have with our peers. The important thing to recognize is that an eating disorder is not just physical; it has many psychological factors that cause getting rid of the eating disorder to be that much harder. The bottom line is that if you or a fellow dancer has an eating disorder, or is exhibiting signs of having an eating disorder, they need professional help. The damage done to your body during that time can be permanent, and could impact your career that you have worked so hard for. This section will look at common eating disorders, and how to identify them.

Anorexia Nervosa

The clinical diagnosis for anorexia nervosa is a refusal to maintain a body weight over the minimal body weight for their age

and height. Individuals with anorexia also exhibit a fear of gaining weight. A person with anorexia can both restrict their dietary intake and exhibit binge-and-purge characteristics. Dancers who have anorexia will typically have excessive weight loss, dry skin, decrease in muscle, and a continued idea that they are 'fat' despite losing significant amounts of weight. The damage done during anorexia can impact not only your skeletal muscle, but also the muscle on your organs. Your dancing ability will decrease because of the muscle atrophy will cause instability, and your stamina will decrease.

Bulimia Nervosa

An individual with bulimia has recurring episodes of binge eating. This binge eating includes eating extremely large amounts of foods in a very short period of time (within a 2 hour period), or a feeling of being out of control when they eat. An individual will also try extreme ways in order to lose weight, such as induced vomiting, misusing laxatives or enemas, fasting, or excessive exercise. Just like anorexia, there are signs that a person has bulimia that can be recognized by others. These are the appearance of being bloated, excessive dry skin, a decrease in muscle tone, refusing to eat, and declaring how 'fat' they are even if they are losing weight. The vomiting that occurs in bulimia can do severe damage to your throat and the enamel on your teeth. Also, overusing or abusing laxatives

can cause absorption problems in the intestine that are hard to reverse even after the individual's bulimia has disappeared.

Disordered Eating

The eating disorders described above are ones that can be diagnosed from a clinical standpoint. However, if a dancer exhibits a few of these symptoms, they can be seen as having disordered eating. For example, the early signs of anorexia or bulimia may just be characterized as disordered eating. Disordered eating is dangerous because it can often be easily hidden, and has the potential of developing into a clinically diagnosed eating disorder. If you see a dancer who has signs of having disordered eating, my best advice would be to talk to a professor, or someone who has the ability to get them professional help.

Effects of Eating Disorders on Performance

At the very bottom line, we want to prevent eating disorders from developing because they are detrimental to an individual's body and mind. However, as a dancer we have to consider the impact it has on the day-to-day activities we are a part of as a dancer. Having an eating disorder will cause deficiencies in both micro and macro nutrients, and can also cause damage to your other organs as they are trying to work overtime to keep your body working. You can't expect your car to run great when it has run out of fuel (it

actually won't run at all), why do we expect our body to be any different.

The initial effects of an eating disorder are actually tricky in regards to how they make the individual feel. At first, the dancer may feel that their performance is actually increasing. Hormones that are released as your body enters its 'flight or fight' method of response can hide any feelings of fatigue you are feeling, and actually can put you in a state of euphoria. These feelings are what continue to convince the individual that their eating disorder is 'good' and they should continue. However, eventually these feelings wear off as the body continues to breakdown. I cannot stress enough how important it is to get someone help as soon as they start to show signs of having an eating disorder because as the disease continues, it starts to become harder and harder to treat.

The Female Athlete Triad

Females have to be especially careful of falling into disordered eating because it can disrupt our female athlete triad. This triad is a combination of energy availability, menstrual function, and bone strength. They are a triad because as energy availability decrease, menstrual function begins to decrease. As you stop releasing the hormones associated with menstrual function, your bone density decreases. This triad becomes prevalent once a dancer starts to limit or purge their calories. The goal for any female athlete

is to keep this triad in balance so that they can keep their menstruations regular, and prevent fractures or breaks.

**A Beautiful Perspective about Body Image from
Leisa Decarlo, a 2014 BFA graduate from OSU!**

The media and merely, our culture, cultivates an unattainable ideal to which we surrender with skewed obedience, viewing this single representation of the body as synonymous for perfection. As dancers, in a realm of ceaseless evaluation and physical exertion, this stigma seems only heightened.

In my experience as both a dancer and woman in this world, I observe this connection manifest in a perception of food as the enemy. To preserve some unrealistic ideal, we negate, control, and censor our food intake in attempt to resist the urge to take up space.

There was a time in my life when the mirror disgusted me. It injured numerous relationships in my life, including my relationship with food. I remember standing in front of the mirror before a high school dance listing the parts of my body of which I disapproved. After rambling off my extensive grocery list of imperfections, my mom looked at me and said simply, "I cannot tell you how hurtful it is to hear the thing I love most in this world show so much hate for herself." It was this realization that helped me to learn to love my body, for its faults, imperfections, and immense, individual, and beautiful capabilities.

Nonetheless, while in college, I've watched many friends struggle with insecurities and often, a seeming tangible solution becomes the desperate manipulation and restriction of food.

Yet, what we see so easily as the enemy is often the fuel that enables us. We have weight and flesh and architecture and the diverse employment of these elements *creates* dance, not hinders it. A dancer must know the value of health if he or she is to truly realize his or her full potential. Training proper eating habits and positive mental health is just as important, if not superior, to that of training proper alignment, muscular efficiency, and technique. Our bodies are instruments, not hollow encasings. As a dancer, I think it is essential to have a healthy relationship with what you're eating and the amazing body you've been given.

Thank you all for taking the time to read about Dance Nutrition. It has been truly an honor to continue to dive into my two common interests of both dance and nutrition—and I only hope that some of you start to see how truly awesome and interesting it is. There is still so much to learn when it comes to the human body and what we put into it—so things may change in the next years. I encourage you to continue researching and finding ways that you fuel your body the best. I think that focusing on your nutrition is as crucial as focusing on your improvement in technique classes. I hope that by focusing on positive ways of eating, we can slowly change the way the dancers view themselves. Therefore, we can stop being so cruel to our bodies, and focus on what is truly beautiful about our bodies and therefore our dancing. I distinctly remember the cruelty that I've put my own body through, and looking back from the other side I've realized that it's not worth the agony, nor is it beneficial to the quality of living or dancing that I wanted for myself. Therefore, I encourage you to eat well, eat often, and continue to grow as a healthy and happy dancer!

-Jenn Clancy

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